

## Appendix G

### City of Galveston Mitigation Actions

#### Contents of this Section

##### G.1 City of Galveston Mitigation Actions

### G.1 City of Galveston Mitigation Actions

Table G.1-1 lists identified mitigation actions, developed and prioritized during the planning process. These measures are listed by hazard to be mitigated.

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**Table G.1-1  
Galveston Mitigation Action Plan, by Hazard**

<b>City of Galveston – Mitigation Action Plan, By Hazard</b>								
<b>Proposed Action</b>	<b>Hazard(s) Addressed</b>	<b>New or Existing Action</b>	<b>Estimated Cost</b>	<b>Potential Funding Source(s)</b>	<b>Agency / Department Responsible</b>	<b>Implementation Schedule</b>	<b>Comments</b>	<b>Priority</b>
<b>All Hazards</b>								
Provide hazard and disaster awareness and preparedness information to the public, both residents and visitors.	All Hazards	Existing	\$2,000	General Fund	Office of Emergency Management	2011-2016 Ongoing annually		High
Use internet to provide information to residents and visitor regarding natural disasters, preparation and protection.	All Hazards	Existing (Modified)	\$5,000	General Fund	Office of Emergency Management	2011-2016 Ongoing annually	This activity is on-going in the aftermath of Hurricane Ike	High
Investigate use of social media to provide information.								
Maintain use of One Call Reaches All as means of notification and information.								
Purchase and distribute NOAA All-Hazard radios or other public notification devices to public facilities, schools, day cares, medical facilities, critical facilities, and large public gathering places.	All Hazards	Existing (Modified)	\$100 per unit	FEMA HMGP	Office of Emergency Management	2011-2016	Applies to existing and future development.	High
Increase on-island CERT capability and capacity.	All Hazards	New	\$5,000	General Funds	Planning and Community Development	2011-2016		Moderate

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Development of Sustainability Plan/Program Implementation.	All Hazards	New	\$125,000	General Funds, CDBG	Planning and Community Development	2011-2016	Applies to existing and future development.	Moderate
Development of Greenprinting Plan for areas east of West End study.	All Hazards	New	\$5,000	General Funds, Texas Parks and Wildlife, CDBG	Planning and Community Development	2011-2016	“Greenprinting” refers to a strategy to manage growth that ensures quality of life, clean air and water, recreation and economic health. Applies to existing and future development.	Moderate
Develop proposed land use mapping to allow easier consideration of hazards in future development.	All Hazards	New	\$10,000	General Funds, CDBG	Planning and Community Development	2011-2016	Applies to future development.	Moderate
Consider / Contract for historic property mitigation study, to determine best practices for mitigation of homes on larger scale.	All Hazards	New	\$50,000	General Funds, THC, GHF, National Park Service, CDBG	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
Digitalization of paper records, city-wide, for access post-disaster (mitigate data loss and allow for continuity of operations/government).	All Hazards	New	\$5,000+	General Funds, FEMA HMGP, CDBG	Planning and Community Development, Municipal Utilities, Office of Emergency Management, IT/Finance Department	2011-2016		Moderate

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Develop detailed inventory of critical facilities, to include elevations, square footage and contents inventory.	All Hazards	New	\$5,000	General Funds	Planning and Community Development, Municipal Utilities, Office of Emergency Management	2011-2016	Applies to existing and future development.	High
Identify and purchase needed vehicles and equipment for public safety departments.	All Hazards	Existing (Modified)	\$750,000	FEMA PA, DHS, General Fund, CDBG	Fire Department, Police Department, Public Works, Beach Patrol, Office of Emergency Management	2011-2016	Some equipment and vehicles will be or has been purchased through FEMA PA funding.	High
Identify critical facilities and other necessary public buildings that require emergency power generation - Purchase and install emergency power generators and related housing and connection equipment at all critical facilities or other necessary public buildings.	All Hazards	Existing (Modified)	Unknown	FEMA HMGP, CDBG, General Funds, Enterprise Funds	Office of Emergency Management, Public Works	2011-2016	Some facilities addressed after Ike. Additional facilities to be identified. Applies to existing and future development.	High
Design and construct a Safe Room (using FEMA 361 design guidance) to house emergency personnel and first responders who must remain on the island during evacuations.	All Hazards	Existing	\$25-\$30MM	FEMA HMGP/ PDM, General Funds, Donations, CDBG	Office of Emergency Management, City Manager's Office	2011-2016	Project applied for under DR-1791 HMGP.	Moderate

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Investigate and implement hardening of IT and phone (communication) infrastructure, to include off-site/remote facilities.	All Hazards	New	\$5,000+	General Funds, FEMA HMGP, CDBG	Planning and Community Development, Municipal Utilities, Office of Emergency Management, IT/Finance Department	2011-2016	Applies to existing and future infrastructure.	High
Increase capacity/hardening for internal departmental communication.	All Hazards	New	\$5,000+	General Funds, FEMA HMGP, CDBG	Planning and Community Development, Municipal Utilities, Office of Emergency Management, IT/Finance Department	2011-2016	Applies to existing and future infrastructure.	High
Develop a standby application for post-disaster code enforcement (includes building, compliance, planning, public works, etc).	All Hazards	New	\$5,000	General Funds	Planning and Community Development	2011-2016		High
<b>Biologic Events</b>								
Harden facility and improve security at unmanned municipal utility facilities.	Biologic Event	New	\$1,000,000	General Funds, DHS, TWDB, FEMA HMGP/PDM	Municipal Utilities	2011-2016	Action will be dependent on availability of funding, and applies to both existing and future development.	Moderate
Study, evaluate, design and construct flood control methods, with particular emphasis on the protection of critical facilities and critical infrastructure.	Biologic Events	Existing (Modified)	\$50,000+ (per structure or device)	CDBG, FEMA HMGP/ PDM/ FMA, General Fund	Public Works	2011-2016	Applies to existing and future structures.	Moderate

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Perform retrofits of public utilities (including sanitary sewer and drinking water systems), which may include the following: inflow guards on manhole covers, elevated electrical components, flood proof or elevate utility structures within SFHAs, ring berms around critical facilities that cannot feasibly be elevated, watertight manhole covers, tied down fuel storage tanks.	Biologic Events	Existing (Modified)	\$5,000+ per project	FEMA HMGP/ PDM/ FMA, General Funds, TWDB, CDBG	Public Works	2011-2016	Applies to existing structures.	Moderate
Implement plans for elimination of on-site sewage treatment.	Biologic Event	New	\$10,000+ per structure	General Funds, Enterprise Funds, CDBG, Property Owners	Planning and Community Development, Municipal Utilities	2011-2016	Applies to existing structures.	Moderate
Monitor funding sources for opportunities to provide assistance to homeowners for purchase of grinder pumps (maintenance would remain property owner's responsibility).	Biologic Event	New	\$5,000+ per structure	Unknown at this time	Planning and Community Development, Municipal Utilities	2011-2016	Applies to existing structures.	Moderate
<b>Coastal Erosion</b>								
Work cooperatively with NOAA and other agencies to conduct workshop/study on sea level rise in Galveston.	Coastal Erosion	New	\$5,000+	General Funds, NOAA	Planning and Community Development	2011-2016		Moderate

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Consider joining the NFIP's Community Rating System.	Coastal Erosion	Existing	\$10,000	General Funds	Planning and Community Development	2011-2016	No cost to join program, though administrative costs will be incurred to maintain membership	Moderate
Consider adoption and enforcement of freeboard requirement into City's Flood Damage Prevention Ordinance.	Coastal Erosion	Existing	\$2,500	General Funds	Planning and Community Development	2011-2016	Action is currently under consideration for implementation. Would apply to future development and any existing structures designated as substantially damaged or improved.	Moderate
Increase number of floodplain managers in the building division through training and certification.	Coastal Erosion	New	\$10,000	General Funds, FEMA	Planning and Community Development	2011-2016		Moderate
Support aggressive beach nourishment program to address critical erosion areas.	Coastal Erosion	Existing (Modified)	Unknown	USACE, GLO, CIAP, GLO CEPRA	GLO, Planning and Community Development	2011-2016	This action is on-going in the aftermath of Hurricane Ike.	High
Restore destroyed dune systems to decrease / mitigate damage to public and private property.	Coastal Erosion	Existing	Unknown	FEMA HMGP/PDM/FMA, State (CEPRA) and local grants, USACE	GLO, Planning and Community Development	2011-2016	This action is on-going in the aftermath of Hurricane Ike.	High
Install shoreline protection devices in areas subject to coastal erosion to reinforce dune systems.	Coastal Erosion	Existing (Modified)	\$175,000	FEMA HMGP, USACE, GLO	GLO, Planning and Community Development, Public Works	2011-2016		Moderate
Elevation, acquisition or other mitigation of identified Repetitive Loss and Severe Repetitive Loss properties.	Coastal Erosion	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/PDM/FMA/SRL/RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	High

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Exposed concrete and rebar on public beaches – remove debris and threat to public and private property – reducing property damage during hazard events.	Coastal Erosion	Existing (Partially Completed)	Unknown	FEMA Public Assistance, GLO, CEPRA, Texas Beach Sweep, CDBG	Public Works	2011-2016	This action is on-going in the aftermath of Hurricane Ike	High
Elevate coastal roads to better protect public during evacuation and to protect the roads from flood damage, where technically feasible.	Coastal Erosion	Existing (Modified)	Unknown	Potential funding from TXDOT, CDBG	FHWA, TXDOT, Public Works	2011-2016 Ongoing project	Applies to existing and future coastal roads.	High
Implement improved drainage projects and better maintenance program for clearing drainage ditches.	Coastal Erosion	Existing (Modified)	Unknown	TWDB, FEMA HMGP, CDBG, Enterprise Funds	Public Works	2011-2016	Applies to existing and future drainage systems.	High
Elevation of structures at risk from flooding.	Coastal Erosion	Existing (Modified)	\$50,000 - \$100,000 (per structure)	CDBG, FEMA HMGP / PDM/ FMA/SRL, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Will require coordination with TDEM and FEMA to address BCA issues.  Applies to existing structures. (Future structures will require elevation to meet current codes/ordinances.)	Moderate
Harden facility and improve security at unmanned municipal utility facilities.	Coastal Erosion	New	\$1,000,000	General Funds, DHS, TWDB, FEMA HMGP/PDM	Municipal Utilities	2011-2016	Action will be dependent on availability of funding, and applies to both existing and future development.	Moderate
Acquisition and demolition of structures damaged by flooding, including abandoned structures.	Coastal Erosion	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Elevation or other flood protection of historic structures at risk from flooding.	Coastal Erosion	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
Study, evaluate, design and construct flood control methods, with particular emphasis on the protection of critical facilities and critical infrastructure.	Coastal Erosion	Existing (Modified)	\$50,000+ (per structure or device)	CDBG, FEMA HMGP/ PDM/ FMA, General Fund	Public Works	2011-2016	Applies to existing and future structures.	Moderate
Perform retrofits of public utilities (including sanitary sewer and drinking water systems), which may include the following: inflow guards on manhole covers, elevated electrical components, flood proof or elevate utility structures within SFHAs, ring berms around critical facilities that cannot feasibly be elevated, watertight manhole covers, tied down fuel storage tanks.	Coastal Erosion	Existing (Modified)	\$5,000+ per project	FEMA HMGP/ PDM/ FMA, General Funds, TWDB, CDBG	Public Works	2011-2016	Applies to existing structures.	Moderate
Rehabilitate the 1894 Bayline, for use as emergency water connection in the event of failure or damage of the water main.	Coastal Erosion	New	\$15,000,000	General Funds, Enterprise Funds, CDBG FEMA HMGP	Municipal Utilities	2011-2016	Applies to existing equipment/structures.	High

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Implement plans for elimination of on-site sewage treatment.	Coastal Erosion	New	\$10,000+ per structure	General Funds, Enterprise Funds, CDBG, Property Owners	Planning and Community Development, Municipal Utilities	2011-2016	Applies to existing structures.	Moderate
<b>Coastal Retreat</b>								
Work cooperatively with NOAA and other agencies to conduct workshop/study on sea level rise in Galveston.	Coastal Retreat	New	\$5,000+	General Funds, NOAA	Planning and Community Development	2011-2016		Moderate
Consider joining the NFIP's Community Rating System.	Coastal Retreat	Existing	\$10,000	General Funds	Planning and Community Development	2011-2016	No cost to join program, though administrative costs will be incurred to maintain membership	Moderate
Consider adoption and enforcement of freeboard requirement into City's Flood Damage Prevention Ordinance.	Coastal Retreat	Existing	\$2,500	General Funds	Planning and Community Development	2011-2016	Action is currently under consideration for implementation. Would apply to future development and any existing structures designated as substantially damaged or improved.	Moderate
Increase number of floodplain managers in the building division through training and certification.	Coastal Retreat	New	\$10,000	General Funds, FEMA	Planning and Community Development	2011-2016		Moderate
Support aggressive beach nourishment program to address critical erosion areas.	Coastal Retreat	Existing (Modified)	Unknown	USACE, GLO, CIAP, GLO CEPRA	GLO, Planning and Community Development	2011-2016	This action is on-going in the aftermath of Hurricane Ike.	High

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Install shoreline protection devices in areas subject to coastal erosion to reinforce dune systems.	Coastal Retreat	Existing (Modified)	\$175,000	FEMA HMGP, USACE, GLO	GLO, Planning and Community Development, Public Works	2011-2016		Moderate
Elevation, acquisition or other mitigation of identified Repetitive Loss and Severe Repetitive Loss properties.	Coastal Retreat	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	High
Exposed concrete and rebar on public beaches – remove debris and threat to public and private property – reducing property damage during hazard events.	Coastal Retreat	Existing (Partially Completed)	Unknown	FEMA Public Assistance, GLO, CEPRA, Texas Beach Sweep, CDBG	Public Works	2011-2016	This action is on-going in the aftermath of Hurricane Ike	High
Elevate coastal roads to better protect public during evacuation and to protect the roads from flood damage, where technically feasible.	Coastal Retreat	Existing (Modified)	Unknown	Potential funding from TXDot, CDBG	FHWA, TXDoT, Public Works	2011-2016 Ongoing project	Applies to existing and future coastal roads.	High
Implement improved drainage projects and better maintenance program for clearing drainage ditches.	Coastal Retreat	Existing (Modified)	Unknown	TWDB, FEMA HMGP, CDBG, Enterprise Funds	Public Works	2011-2016	Applies to existing and future drainage systems.	High

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Elevation of structures at risk from flooding.	Coastal Retreat	Existing (Modified)	\$50,000 - \$100,000 (per structure)	CDBG, FEMA HMGP / PDM/ FMA/SRL, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Will require coordination with TDEM and FEMA to address BCA issues.  Applies to existing structures. (Future structures will require elevation to meet current codes/ordinances.)	Moderate
Harden facility and improve security at unmanned municipal utility facilities.	Coastal Retreat	New	\$1,000,000	General Funds, DHS, TWDB, FEMA HMGP/PDM	Municipal Utilities	2011-2016	Action will be dependent on availability of funding, and applies to both existing and future development.	Moderate
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Elevation or other flood protection of historic structures at risk from flooding.	Coastal Retreat	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
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<b>Coastal Subsidence</b>								
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<b>Drought</b>								
Implement public information and education campaign to educate residents and businesses about benefits of xerogardening and xeriscaping.	Drought	Existing	\$5,000	General funds, Texas Agriculture Extension Service	Planning and Community Development, Office of Emergency Management	2011-2016	Applies to existing and future development.	High
Increase native canopy by tree planting in public rights-of-way to reduce urban heat levels.	Drought	Existing	\$10,000	Arbor Day Foundation General Funds, CDBG	Planning and Community Development, Public Works	2011-2016	Applies to existing and future development.	Moderate
<b>Environmental Disaster</b>								
Harden facility and improve security at unmanned municipal utility facilities.	Environmental Disaster	New	\$1,000,000	General Funds, DHS, TWDB, FEMA HMGP/PDM	Municipal Utilities	2011-2016	Action will be dependent on availability of funding, and applies to both existing and future development.	Moderate
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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Perform retrofits of public utilities (including sanitary sewer and drinking water systems), which may include the following: inflow guards on manhole covers, elevated electrical components, flood proof or elevate utility structures within SFHAs, ring berms around critical facilities that cannot feasibly be elevated, watertight manhole covers, tied down fuel storage tanks.	Environmental Disaster	Existing (Modified)	\$5,000+ per project	FEMA HMGP/ PDM/ FMA, General Funds, TWDB, CDBG	Public Works	2011-2016	Applies to existing structures.	Moderate
Implement plans for elimination of on-site sewage treatment.	Environmental Disaster	New	\$10,000+ per structure	General Funds, Enterprise Funds, CDBG, Property Owners	Planning and Community Development, Municipal Utilities	2011-2016	Applies to existing structures.	Moderate
<b>Extreme Wind</b>								
Conduct town meeting prior to start of hurricane season, to provide information to residents.	Extreme Wind	Existing	\$2,000	General Fund	Office of Emergency Management	2011-2016 Ongoing Annually	This activity occurs annually prior to hurricane season.	High
Consider alternative methodologies for determination of substantial damage.	Extreme Wind	New	\$5,000	General Funds	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
Support aggressive beach nourishment program to address critical erosion areas.	Extreme Wind	Existing (Modified)	Unknown	USACE, GLO, CIAP, GLO CEPR	GLO, Planning and Community Development	2011-2016	This action is on-going in the aftermath of Hurricane Ike.	High

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City of Galveston – Mitigation Action Plan, By Hazard								
Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Restore destroyed dune systems to decrease / mitigate damage to public and private property.	Extreme Wind	Existing	Unknown	FEMA HMGP/PDM/ FMA, State (CEPRA) and local grants, USACE	GLO, Planning and Community Development	2011-2016	This action is on-going in the aftermath of Hurricane Ike.	High
Install shoreline protection devices in areas subject to coastal erosion to reinforce dune systems.	Extreme Wind	Existing (Modified)	\$175,000	FEMA HMGP, USACE, GLO	GLO, Planning and Community Development, Public Works	2011-2016		Moderate
Elevation, acquisition or other mitigation of identified Repetitive Loss and Severe Repetitive Loss properties.	Extreme Wind	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	High
Exposed concrete and rebar on public beaches – remove debris and threat to public and private property – reducing property damage during hazard events.	Extreme Wind	Existing (Partially Completed)	Unknown	FEMA Public Assistance, GLO, CEPRA, Texas Beach Sweep, CDBG	Public Works	2011-2016	This action is on-going in the aftermath of Hurricane Ike	High
Elevate coastal roads to better protect public during evacuation and to protect the roads from flood damage, where technically feasible.	Extreme Wind	Existing (Modified)	Unknown	Potential funding from TXDot, CDBG	FHWA, TXDoT, Public Works	2011-2016 Ongoing project	Applies to existing and future coastal roads.	High
Implement improved drainage projects and better maintenance program for clearing drainage ditches.	Extreme Wind	Existing (Modified)	Unknown	TWDB, FEMA HMGP, CDBG, Enterprise Funds	Public Works	2011-2016	Applies to existing and future drainage systems.	High

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City of Galveston – Mitigation Action Plan, By Hazard								
Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Elevation of structures at risk from flooding.	Extreme Wind	Existing (Modified)	\$50,000 - \$100,000 (per structure)	CDBG, FEMA HMGP / PDM/ FMA/SRL, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Will require coordination with TDEM and FEMA to address BCA issues.  Applies to existing structures. (Future structures will require elevation to meet current codes/ordinances.)	Moderate
Harden facility and improve security at unmanned municipal utility facilities.	Extreme Wind	New	\$1,000,000	General Funds, DHS, TWDB, FEMA HMGP/PDM	Municipal Utilities	2011-2016	Action will be dependent on availability of funding, and applies to both existing and future development.	Moderate
Acquisition and demolition of structures damaged by flooding, including abandoned structures.	Extreme Wind	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
Elevation or other flood protection of historic structures at risk from flooding.	Extreme Wind	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
Study, evaluate, design and construct flood control methods, with particular emphasis on the protection of critical facilities and critical infrastructure.	Extreme Wind	Existing (Modified)	\$50,000+ (per structure or device)	CDBG, FEMA HMGP/ PDM/ FMA, General Fund	Public Works	2011-2016	Applies to existing and future structures.	Moderate
Mitigation/hardening of substantially damaged structures (historic/non-historic).	Extreme Wind	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM, Property Owners	Planning and Community Development	2011-2016	Applies to existing and future structures.	Moderate

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City of Galveston – Mitigation Action Plan, By Hazard								
Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Perform retrofits of public utilities (including sanitary sewer and drinking water systems), which may include the following: inflow guards on manhole covers, elevated electrical components, flood proof or elevate utility structures within SFHAs, ring berms around critical facilities that cannot feasibly be elevated, watertight manhole covers, tied down fuel storage tanks.	Extreme Wind	Existing (Modified)	\$5,000+ per project	FEMA HMGP/ PDM/ FMA, General Funds, TWDB, CDBG	Public Works	2011-2016	Applies to existing structures.	Moderate
Investigate eligibility and benefits of National Weather Service’s “StormReady” Community program – Apply for entry to program, if beneficial and feasible.	Extreme Wind	Existing (Modified)	\$2,500	Private Funds, General funds	Office of Emergency Management	2011-2016		Low
Wind retrofit critical facilities and those other public buildings that must function following as extreme wind event.	Extreme Wind	Existing (Modified)	\$25,000+	FEMA HMGP/ PDM, General Funds, CDBG	Office of Emergency Management, Planning and Community Development, Public Works, City Manager’s Office	2011-2016	Project for McGuire Dent Recreation Center submitted under DR-1791 HMGP. Applies to existing structures.	Moderate
Investigate ways to harden and protect facilities and infrastructure belonging to Gulf Coast Water Authority (Sole source provider of potable water to City) – Implement projects as funding becomes available.	Extreme Wind	New	\$5,000+	General Funds, Enterprise Funds, FEMA HMGP/ PDM, CDBG	Municipal Utilities	2011-2016	Applies to existing and future development.	High

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City of Galveston – Mitigation Action Plan, By Hazard								
Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Rehabilitate the 1894 Bayline, for use as emergency water connection in the event of failure or damage of the water main.	Extreme Wind	New	\$15,000,000	General Funds, Enterprise Funds, CDBG FEMA HMGP	Municipal Utilities	2011-2016	Applies to existing equipment/structures.	High
<b>Flooding</b>								
Conduct town meeting prior to start of hurricane season, to provide information to residents.	Flooding	Existing	\$2,000	General Fund	Office of Emergency Management	2011-2016 Ongoing Annually	This activity occurs annually prior to hurricane season.	High
Consider / Development of structural acquisition plan/procedures.	Flooding	New	\$5,000	General Funds	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
Consider / Development of structural elevation plan/procedures.	Flooding	New	\$5,000	General Funds	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
Consider joining the NFIP's Community Rating System.	Flooding	Existing	\$10,000	General Funds	Planning and Community Development	2011-2016	No cost to join program, though administrative costs will be incurred to maintain membership	Moderate
Consider adoption and enforcement of freeboard requirement into City's Flood Damage Prevention Ordinance.	Flooding	Existing	\$2,500	General Funds	Planning and Community Development	2011-2016	Action is currently under consideration for implementation. Would apply to future development and any existing structures designated as substantially damaged or improved.	Moderate
Increase number of floodplain managers in the building division through training and certification.	Flooding	New	\$10,000	General Funds, FEMA	Planning and Community Development	2011-2016		Moderate

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City of Galveston – Mitigation Action Plan, By Hazard								
Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Support aggressive beach nourishment program to address critical erosion areas.	Flooding	Existing (Modified)	Unknown	USACE, GLO, CIAP, GLO CEPRA	GLO, Planning and Community Development	2011-2016	This action is on-going in the aftermath of Hurricane Ike.	High
Restore destroyed dune systems to decrease / mitigate damage to public and private property.	Flooding	Existing	Unknown	FEMA HMGP/PDM/ FMA, State (CEPRA) and local grants, USACE	GLO, Planning and Community Development	2011-2016	This action is on-going in the aftermath of Hurricane Ike.	High
Install shoreline protection devices in areas subject to coastal erosion to reinforce dune systems.	Flooding	Existing (Modified)	\$175,000	FEMA HMGP, USACE, GLO	GLO, Planning and Community Development, Public Works	2011-2016		Moderate
Elevation, acquisition or other mitigation of identified Repetitive Loss and Severe Repetitive Loss properties.	Flooding	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	High
Exposed concrete and rebar on public beaches – remove debris and threat to public and private property – reducing property damage during hazard events.	Flooding	Existing (Partially Completed)	Unknown	FEMA Public Assistance, GLO, CEPRA, Texas Beach Sweep, CDBG	Public Works	2011-2016	This action is on-going in the aftermath of Hurricane Ike	High
Elevate coastal roads to better protect public during evacuation and to protect the roads from flood damage, where technically feasible.	Flooding	Existing (Modified)	Unknown	Potential funding from TXDot, CDBG	FHWA, TXDoT, Public Works	2011-2016 Ongoing project	Applies to existing and future coastal roads.	High
Implement improved drainage projects and better maintenance program for clearing drainage ditches.	Flooding	Existing (Modified)	Unknown	TWDB, FEMA HMGP, CDBG, Enterprise Funds	Public Works	2011-2016	Applies to existing and future drainage systems.	High

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City of Galveston – Mitigation Action Plan, By Hazard								
Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Elevation of structures at risk from flooding.	Flooding	Existing (Modified)	\$50,000 - \$100,000 (per structure)	CDBG, FEMA HMGP / PDM/ FMA/SRL, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Will require coordination with TDEM and FEMA to address BCA issues.  Applies to existing structures. (Future structures will require elevation to meet current codes/ordinances.)	Moderate
Harden facility and improve security at unmanned municipal utility facilities.	Flooding	New	\$1,000,000	General Funds, DHS, TWDB, FEMA HMGP/PDM	Municipal Utilities	2011-2016	Action will be dependent on availability of funding, and applies to both existing and future development.	Moderate
Acquisition and demolition of structures damaged by flooding, including abandoned structures.	Flooding	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
Elevation or other flood protection of historic structures at risk from flooding.	Flooding	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
Study, evaluate, design and construct flood control methods, with particular emphasis on the protection of critical facilities and critical infrastructure.	Flooding	Existing (Modified)	\$50,000+ (per structure or device)	CDBG, FEMA HMGP/ PDM/ FMA, General Fund	Public Works	2011-2016	Applies to existing and future structures.	Moderate

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City of Galveston – Mitigation Action Plan, By Hazard								
Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Perform retrofits of public utilities (including sanitary sewer and drinking water systems), which may include the following: inflow guards on manhole covers, elevated electrical components, flood proof or elevate utility structures within SFHAs, ring berms around critical facilities that cannot feasibly be elevated, watertight manhole covers, tied down fuel storage tanks.	Flooding	Existing (Modified)	\$5,000+ per project	FEMA HMGP/ PDM/ FMA, General Funds, TWDB, CDBG	Public Works	2011-2016	Applies to existing structures.	Moderate
Develop and implement stormwater drainage system improvements.	Flooding	Existing	\$25,000	General Funds, Enterprise Funds, TWDB, CDBG	Public Works	2011-2016	Applies to existing and future development.	Moderate
Investigate ways to harden and protect facilities and infrastructure belonging to Gulf Coast Water Authority (Sole source provider of potable water to City) – Implement projects as funding becomes available.	Flooding	New	\$5,000+	General Funds, Enterprise Funds, FEMA HMGP/ PDM, CDBG	Municipal Utilities	2011-2016	Applies to existing and future development.	High
Rehabilitate the 1894 Bayline, for use as emergency water connection in the event of failure or damage of the water main.	Flooding	New	\$15,000,000	General Funds, Enterprise Funds, CDBG FEMA HMGP	Municipal Utilities	2011-2016	Applies to existing equipment/structures.	High

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Implement plans for elimination of on-site sewage treatment.	Flooding	New	\$10,000+ per structure	General Funds, Enterprise Funds, CDBG, Property Owners	Planning and Community Development, Municipal Utilities	2011-2016	Applies to existing structures.	Moderate
<b>Hazardous Materials Incident</b>								
Implement public information and education campaign to educate residents and businesses about hazardous materials incidents, evacuation procedures in the event of an accident, and sheltering-in-place.	Hazardous Materials Incident	Existing	\$2,500	Private Funds, General funds, FEMA HMGP	Galveston Fire Department, Office of Emergency Management, Public Works	2011-2016		High
Install security/surveillance equipment at all municipal facilities.	Hazardous Materials Incident	Existing (Modified)	\$100,000	TDEM, DHS, General Funds	Office of Emergency Management	2011-2016	Applies to existing and future development.	High
Harden facility and improve security at unmanned municipal utility facilities.	Hazardous Materials Incident	New	\$1,000,000	General Funds, DHS, TWDB, FEMA HMGP/PDM	Municipal Utilities	2011-2016	Action will be dependent on availability of funding, and applies to both existing and future development.	Moderate
Study, evaluate, design and construct flood control methods, with particular emphasis on the protection of critical facilities and critical infrastructure.	Hazardous Materials Incident	Existing (Modified)	\$50,000+ (per structure or device)	CDBG, FEMA HMGP/ PDM/ FMA, General Fund	Public Works	2011-2016	Applies to existing and future structures.	Moderate

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Perform retrofits of public utilities (including sanitary sewer and drinking water systems), which may include the following: inflow guards on manhole covers, elevated electrical components, flood proof or elevate utility structures within SFHAs, ring berms around critical facilities that cannot feasibly be elevated, watertight manhole covers, tied down fuel storage tanks.	Hazardous Materials Incident	Existing (Modified)	\$5,000+ per project	FEMA HMGP/ PDM/ FMA, General Funds, TWDB, CDBG	Public Works	2011-2016	Applies to existing structures.	Moderate
Develop and implement a system for early detection / notification of hazardous materials incidents, leaks and accidents.	Hazardous Materials Incident	Existing (Modified)	\$25,000+	Private funding	Galveston Fire Department, Public Works, Office of Emergency Management	2011-2016	Cost would be dependent on material.	Moderate
Investigate ways to harden and protect facilities and infrastructure belonging to Gulf Coast Water Authority (Sole source provider of potable water to City) – Implement projects as funding becomes available.	Hazardous Materials Incident	New	\$5,000+	General Funds, Enterprise Funds, FEMA HMGP/ PDM, CDBG	Municipal Utilities	2011-2016	Applies to existing and future development.	High
Rehabilitate the 1894 Bayline, for use as emergency water connection in the event of failure or damage of the water main.	Hazardous Materials Incident	New	\$15,000,000	General Funds, Enterprise Funds, CDBG FEMA HMGP	Municipal Utilities	2011-2016	Applies to existing equipment/structures.	High
<b>Lightning</b>								

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City of Galveston – Mitigation Action Plan, By Hazard								
Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Perform retrofits of public utilities (including sanitary sewer and drinking water systems), which may include the following: inflow guards on manhole covers, elevated electrical components, flood proof or elevate utility structures within SFHAs, ring berms around critical facilities that cannot feasibly be elevated, watertight manhole covers, tied down fuel storage tanks.	Lightning	Existing (Modified)	\$5,000+ per project	FEMA HMGP/ PDM/ FMA, General Funds, TWDB, CDBG	Public Works	2011-2016	Applies to existing structures.	Moderate
Investigate eligibility and benefits of National Weather Service's "StormReady" Community program – Apply for entry to program, if beneficial and feasible.	Lightning	Existing (Modified)	\$2,500	Private Funds, General funds	Office of Emergency Management	2011-2016		Low
<b>Sea Level Change</b>								
Work cooperatively with NOAA and other agencies to conduct workshop/study on sea level rise in Galveston.	Sea Level Change	New	\$5,000+	General Funds, NOAA	Planning and Community Development	2011-2016		Moderate
Consider joining the NFIP's Community Rating System.	Sea Level Change	Existing	\$10,000	General Funds	Planning and Community Development	2011-2016	No cost to join program, though administrative costs will be incurred to maintain membership	Moderate

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Consider adoption and enforcement of freeboard requirement into City's Flood Damage Prevention Ordinance.	Sea Level Change	Existing	\$2,500	General Funds	Planning and Community Development	2011-2016	Action is currently under consideration for implementation. Would apply to future development and any existing structures designated as substantially damaged or improved.	Moderate
Increase number of floodplain managers in the building division through training and certification.	Sea Level Change	New	\$10,000	General Funds, FEMA	Planning and Community Development	2011-2016		Moderate
Support aggressive beach nourishment program to address critical erosion areas.	Sea Level Change	Existing (Modified)	Unknown	USACE, GLO, CIAP, GLO CEPR	GLO, Planning and Community Development	2011-2016	This action is on-going in the aftermath of Hurricane Ike.	High
Restore destroyed dune systems to decrease / mitigate damage to public and private property.	Sea Level Change	Existing	Unknown	FEMA HMGP/PDM/FMA, State (CEPRA) and local grants, USACE	GLO, Planning and Community Development	2011-2016	This action is on-going in the aftermath of Hurricane Ike.	High
Install shoreline protection devices in areas subject to coastal erosion to reinforce dune systems.	Sea Level Change	Existing (Modified)	\$175,000	FEMA HMGP, USACE, GLO	GLO, Planning and Community Development, Public Works	2011-2016		Moderate
Elevation, acquisition or other mitigation of identified Repetitive Loss and Severe Repetitive Loss properties.	Sea Level Change	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	High

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Exposed concrete and rebar on public beaches – remove debris and threat to public and private property – reducing property damage during hazard events.	Sea Level Change	Existing (Partially Completed)	Unknown	FEMA Public Assistance, GLO, CEPRA, Texas Beach Sweep, CDBG	Public Works	2011-2016	This action is on-going in the aftermath of Hurricane Ike	High
Elevate coastal roads to better protect public during evacuation and to protect the roads from flood damage, where technically feasible.	Sea Level Change	Existing (Modified)	Unknown	Potential funding from TXDOT, CDBG	FHWA, TXDOT, Public Works	2011-2016 Ongoing project	Applies to existing and future coastal roads.	High
Implement improved drainage projects and better maintenance program for clearing drainage ditches.	Sea Level Change	Existing (Modified)	Unknown	TWDB, FEMA HMGP, CDBG, Enterprise Funds	Public Works	2011-2016	Applies to existing and future drainage systems.	High
Elevation of structures at risk from flooding.	Sea Level Change	Existing (Modified)	\$50,000 - \$100,000 (per structure)	CDBG, FEMA HMGP / PDM/ FMA/SRL, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Will require coordination with TDEM and FEMA to address BCA issues.  Applies to existing structures. (Future structures will require elevation to meet current codes/ordinances.)	Moderate
Harden facility and improve security at unmanned municipal utility facilities.	Sea Level Change	New	\$1,000,000	General Funds, DHS, TWDB, FEMA HMGP/PDM	Municipal Utilities	2011-2016	Action will be dependent on availability of funding, and applies to both existing and future development.	Moderate
Acquisition and demolition of structures damaged by flooding, including abandoned structures.	Sea Level Change	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Elevation or other flood protection of historic structures at risk from flooding.	Sea Level Change	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
Study, evaluate, design and construct flood control methods, with particular emphasis on the protection of critical facilities and critical infrastructure.	Sea Level Change	Existing (Modified)	\$50,000+ (per structure or device)	CDBG, FEMA HMGP/ PDM/ FMA, General Fund	Public Works	2011-2016	Applies to existing and future structures.	Moderate
Perform retrofits of public utilities (including sanitary sewer and drinking water systems), which may include the following: inflow guards on manhole covers, elevated electrical components, flood proof or elevate utility structures within SFHAs, ring berms around critical facilities that cannot feasibly be elevated, watertight manhole covers, tied down fuel storage tanks.	Sea Level Change	Existing (Modified)	\$5,000+ per project	FEMA HMGP/ PDM/ FMA, General Funds, TWDB, CDBG	Public Works	2011-2016	Applies to existing structures.	Moderate
Investigate ways to harden and protect facilities and infrastructure belonging to Gulf Coast Water Authority (Sole source provider of potable water to City) – Implement projects as funding becomes available.	Sea Level Change	New	\$5,000+	General Funds, Enterprise Funds, FEMA HMGP/ PDM, CDBG	Municipal Utilities	2011-2016	Applies to existing and future development.	High

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Rehabilitate the 1894 Bayline, for use as emergency water connection in the event of failure or damage of the water main.	Sea Level Change	New	\$15,000,000	General Funds, Enterprise Funds, CDBG FEMA HMGP	Municipal Utilities	2011-2016	Applies to existing equipment/structures.	High
Implement plans for elimination of on-site sewage treatment.	Sea Level Change	New	\$10,000+ per structure	General Funds, Enterprise Funds, CDBG, Property Owners	Planning and Community Development, Municipal Utilities	2011-2016	Applies to existing structures.	Moderate
<b>Terrorism</b>								
Install security/surveillance equipment at all municipal facilities.	Terrorism	Existing (Modified)	\$100,000	TDEM, DHS, General Funds	Office of Emergency Management	2011-2016	Applies to existing and future development.	High
Harden facility and improve security at unmanned municipal utility facilities.	Terrorism	New	\$1,000,000	General Funds, DHS, TWDB, FEMA HMGP/PDM	Municipal Utilities	2011-2016	Action will be dependent on availability of funding, and applies to both existing and future development.	Moderate
Investigate ways to harden and protect facilities and infrastructure belonging to Gulf Coast Water Authority (Sole source provider of potable water to City) – Implement projects as funding becomes available.	Terrorism	New	\$5,000+	General Funds, Enterprise Funds, FEMA HMGP/ PDM, CDBG	Municipal Utilities	2011-2016	Applies to existing and future development.	High
Rehabilitate the 1894 Bayline, for use as emergency water connection in the event of failure or damage of the water main.	Terrorism	New	\$15,000,000	General Funds, Enterprise Funds, CDBG FEMA HMGP	Municipal Utilities	2011-2016	Applies to existing equipment/structures.	High
<b>Tsunami</b>								

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Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Consider joining the NFIP's Community Rating System.	Tsunami	Existing	\$10,000	General Funds	Planning and Community Development	2011-2016	No cost to join program, though administrative costs will be incurred to maintain membership	Moderate
Consider adoption and enforcement of freeboard requirement into City's Flood Damage Prevention Ordinance.	Tsunami	Existing	\$2,500	General Funds	Planning and Community Development	2011-2016	Action is currently under consideration for implementation. Would apply to future development and any existing structures designated as substantially damaged or improved.	Moderate
Increase number of floodplain managers in the building division through training and certification.	Tsunami	New	\$10,000	General Funds, FEMA	Planning and Community Development	2011-2016		Moderate
Support aggressive beach nourishment program to address critical erosion areas.	Tsunami	Existing (Modified)	Unknown	USACE, GLO, CIAP, GLO CEPRA	GLO, Planning and Community Development	2011-2016	This action is on-going in the aftermath of Hurricane Ike.	High
Restore destroyed dune systems to decrease / mitigate damage to public and private property.	Tsunami	Existing	Unknown	FEMA HMGP/PDM/FMA, State (CEPRA) and local grants, USACE	GLO, Planning and Community Development	2011-2016	This action is on-going in the aftermath of Hurricane Ike.	High
Install shoreline protection devices in areas subject to coastal erosion to reinforce dune systems.	Tsunami	Existing (Modified)	\$175,000	FEMA HMGP, USACE, GLO	GLO, Planning and Community Development, Public Works	2011-2016		Moderate
Elevation, acquisition or other mitigation of identified Repetitive Loss and Severe Repetitive Loss properties.	Tsunami	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/PDM/FMA/SRL/RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	High

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City of Galveston – Mitigation Action Plan, By Hazard								
Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Exposed concrete and rebar on public beaches – remove debris and threat to public and private property – reducing property damage during hazard events.	Tsunami	Existing (Partially Completed)	Unknown	FEMA Public Assistance, GLO, CEPRA, Texas Beach Sweep, CDBG	Public Works	2011-2016	This action is on-going in the aftermath of Hurricane Ike	High
Elevate coastal roads to better protect public during evacuation and to protect the roads from flood damage, where technically feasible.	Tsunami	Existing (Modified)	Unknown	Potential funding from TXDOT, CDBG	FHWA, TXDOT, Public Works	2011-2016 Ongoing project	Applies to existing and future coastal roads.	High
Implement improved drainage projects and better maintenance program for clearing drainage ditches.	Tsunami	Existing (Modified)	Unknown	TWDB, FEMA HMGP, CDBG, Enterprise Funds	Public Works	2011-2016	Applies to existing and future drainage systems.	High
Elevation of structures at risk from flooding.	Tsunami	Existing (Modified)	\$50,000 - \$100,000 (per structure)	CDBG, FEMA HMGP / PDM/ FMA/SRL, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Will require coordination with TDEM and FEMA to address BCA issues.  Applies to existing structures. (Future structures will require elevation to meet current codes/ordinances.)	Moderate
Acquisition and demolition of structures damaged by flooding, including abandoned structures.	Tsunami	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate

The City of Galveston, Texas  
Appendix G: Mitigation Actions

City of Galveston – Mitigation Action Plan, By Hazard								
Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Elevation or other flood protection of historic structures at risk from flooding.	Tsunami	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM/ FMA/ SRL/ RFC, Property Owners, NFIP ICC	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
Study, evaluate, design and construct flood control methods, with particular emphasis on the protection of critical facilities and critical infrastructure.	Tsunami	Existing (Modified)	\$50,000+ (per structure or device)	CDBG, FEMA HMGP/ PDM/ FMA, General Fund	Public Works	2011-2016	Applies to existing and future structures.	Moderate
Perform retrofits of public utilities (including sanitary sewer and drinking water systems), which may include the following: inflow guards on manhole covers, elevated electrical components, flood proof or elevate utility structures within SFHAs, ring berms around critical facilities that cannot feasibly be elevated, watertight manhole covers, tied down fuel storage tanks.	Tsunami	Existing (Modified)	\$5,000+ per project	FEMA HMGP/ PDM/ FMA, General Funds, TWDB, CDBG	Public Works	2011-2016	Applies to existing structures.	Moderate
Implement plans for elimination of on-site sewage treatment.	Tsunami	New	\$10,000+ per structure	General Funds, Enterprise Funds, CDBG, Property Owners	Planning and Community Development, Municipal Utilities	2011-2016	Applies to existing structures.	Moderate
<b>Wildfire / Urban Fire</b>								

The City of Galveston, Texas  
Appendix G: Mitigation Actions

City of Galveston – Mitigation Action Plan, By Hazard								
Proposed Action	Hazard(s) Addressed	New or Existing Action	Estimated Cost	Potential Funding Source(s)	Agency / Department Responsible	Implementation Schedule	Comments	Priority
Implement public information and education campaign to educate residents and businesses on how to reduce the threat of urban fires and wildfires.	Wildfire / Urban Fire	Existing	\$2,500	FEMA HMGP, Texas Forest Service, General Funds	Galveston Fire Department, Office of Emergency Management	2011-2016	Applies to existing and future development.	High
Consider alternative methodologies for determination of substantial damage.	Wildfire / Urban Fire	New	\$5,000	General Funds	Planning and Community Development	2011-2016	Applies to existing structures.	Moderate
Mitigation/hardening of substantially damaged structures (historic/non-historic).	Wildfire / Urban Fire	Existing (Modified)	\$50,000+ (per structure)	CDBG, FEMA HMGP/ PDM, Property Owners	Planning and Community Development	2011-2016	Applies to existing and future structures.	Moderate
Develop vegetation management program to mitigate spread and fueling of fires.	Wildfire / Urban Fire	Existing	\$5,000	FEMA HMGP/ PDM, Texas Forest Service, General Funds, CDBG	Galveston Fire Department	2011-2016	Applies to existing and future development.	Moderate